

Roy Luo

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EDUCATION

University of Waterloo

Honours Mathematics, Coop

Waterloo, Ontario

September 2023 – April 2027

McMaster University

Mathematics and Statistics

Hamilton, Ontario

September 2022 – April 2023

TECHNICAL SKILLS

Languages: Python, R, SQL

Platforms and Tools: PowerBI, Excel, Git

Libraries: pandas, NumPy, scipy, scikit-learn, Matplotlib, Plotly, tidyverse, ggplot2

EXPERIENCE

Investment Risk Analyst Intern

Healthcare of Ontario Pension Plan

January 2024 – April 2024

Toronto, ON

- Automated dynamic hedging calculations using Python, reducing manual processing time by 20 hours a month and improving reporting accuracy.
- Bootstrapped market data to construct time series datasets in Excel, used for 10,000 Monte Carlo simulations to enhance accuracy and reliability of VaR assessments.
- Engineered a stress testing tool that evaluated the impact of real rate fluctuations on billions in both liabilities and fixed-income holdings using data from Snowflake, SAP HANA and SQL Server.
- Streamlined the process for generating liquidity risk reports using matplotlib, reducing the turnaround time by 33% and ensuring compliance with financial regulations.

Simcorp Dimension Intern

Precision Insight Consulting

May 2023 – August 2023

Markham, ON

- Imported equity/bond trades using built-in tools, mapping them to transaction codes and performing instrument type validation.
- Configured and managed batch jobs for data extraction, optimizing data handling and processing efficiency.
- Constructed a reference file documenting daily CAD/USD settlements in Excel and NAV reconciliation reports in Python, enhancing data accessibility and accuracy for further analytical purposes.
- Managed, reviewed, and allocated Jira tickets, ensuring seamless coordination and timely resolution of tasks.

PROJECTS

Live Crypto Orderbook Dashboard | *R, SQL Server, PowerBI*

- Developed an R script to extract, clean and reformat live orderbook data from a websocket feed transmitting 50+ Bitcoin orders a second.
- Uploaded and stored data in SQL Server, which was loaded into PowerBI using DirectQuery and used to create a live dashboard.
- Maintained a near real-time cryptocurrency orderbook dashboard, displaying important metrics like mid-market rate, order prices, market depth, and bid-ask spread.

League of Legends Jungle Tracker | *Python, pandas, Plotly*

- Developed a Python application with a Streamlit UI to retrieve data from a REST API based on user input.
- Utilized pandas to process data, generating interactive Plotly visualizations on-demand.
- Implemented algorithms to identify specific players in ongoing matches and extract targeted data.
- Parsed through JSON data and handled API errors using requests library.
- Visualized players' in-game positions at defined time intervals in historical matches.